REMARKS

This Amendment responds to the Office Action dated December 2, 2004 in which the Examiner objected to the disclosure and drawings and rejected claims 1-19 under 35 U.S.C. §103.

As indicated above, minor informalities in the specification have been corrected. Therefore, applicants respectfully request the Examiner withdraws the objection to the disclosure.

Attached to this Amendment are replacement sheets for Figures 2, 6 and 8. Therefore, applicants respectfully request the Examiner withdraws the objection to the drawings.

Claim 1 claims an image processor, claim 5 claims a method of image processing and claim 8 claims a recording medium to be executed by a computer storing a program. The image processor, method and program include first and second decision controllers and a color decision controller. The first decision controller decides whether input color data of a target pixel exist in first ranges. The second decision controller decides whether differences between color data of the target pixel and those of pixels adjacent thereto exist in second ranges different from the first ranges. The color decision controller decides that the target pixel has a specified color when the first decision controller decides that the color data of the target pixel exist in the first ranges and the second decision controller decides that the differences exist in the second ranges.

Through the structure and method of the claimed invention a) deciding whether differences between color data of a target pixel and those of pixels adjacent thereto exist and b) deciding whether differences exist in second ranges different

from first ranges as claimed in claims 1, 5 and 8, the claimed invention provides an image processor, method and program which can detect a specified color at high precision. The prior art does not show, teach or suggest the invention as claimed in claims 1, 5 and 8.

Claim 11 claims an image processor, claim 14 claims a method of image processing and claim 17 claims a recording medium to be executed by a computer storing a program. The image processor, method and program include first and second decision controllers and a color decision controller. The first decision controller decides whether input color data of a target pixel exist in first ranges. The second decision controller performs calculation on the input color data of the target pixel and decides whether results of the calculation exist in second ranges different from the first ranges. The decision controller decides that the target pixel has a specified color when the first decision controller decides that the color data of the target pixel exist in the first ranges and the second decision controller decides that the results exist in the second ranges.

Through the structure and method of the claimed invention deciding whether results of a calculation exist in second ranges different from first ranges as claimed in claims 11, 14 and 17, the claimed invention provides an image processor, method and program which can detect a specific color at high precision. The prior art does not show, teach or suggest the invention as claimed in claims 11, 14 and 17.

Claims 1-3, 5-6, 8-9, 11, 14 and 17 were rejected under 35 U.S.C. §103 as being unpatentable over *Mutoh et al* (U.S. Patent No. 6,631,210) in view of *Arai* (U.S. Patent No. 6,681,040).

Applicants respectfully traverse the Examiner's rejection of the claims under 35 U.S.C. §103. The claims have been reviewed in light of the Office Action, and for reasons which will be set forth below, applicants respectfully request the Examiner withdraws the rejection to the claims and allows the claims to issue.

Mutoh et al appears to disclose an image-processing apparatus which can discriminate image areas so as to carry out an optimal image process with respect to inputted multi-value image data, in digital color copying machines and color scanners, and also concerns an image processing method for such an apparatus. (col. 1, lines 7-11) First, as illustrated in FIG. 6, the above-mentioned image-processing apparatus is provided with, at least, an input section 1, an image-processing section 2 and a recording section 4. (col. 7, lines 35-38) The above-mentioned image-processing section 2 is provided with an image area discrimination section 3 for discriminating each image area as a pretreatment before processing the digital image. In this image area discrimination section 3, at least a first image area discrimination circuit 3a and a second image area discrimination circuit 3b are installed. Moreover, the image-processing section 2 is also provided with a processing section (not shown) that carries out an aftertreatment (filter treatment) based upon the results of the pretreatment in the image area discrimination section 3. (col. 7, lines 52-62) In the image-processing apparatus based upon multi-value image data for respective color components CMY obtained by scanning an original document, a color-image area discrimination process is carried out so as to discriminate whether or not each of the areas to which respective pixels on the image belong is a black character area. In the present embodiment, an explanation will be given of a second image area discrimination circuit 3b installed in an image

area discrimination section 3 shown in FIG. 6. Referring to FIG. 18, an explanation will be given of the outline of the construction of the second image area discrimination circuit 3b. The above-mentioned second image area discrimination circuit 3b is constituted by a line memory 101, a color judgment circuit 102, an edge discrimination circuit (edge discrimination means, edge discrimination process) 103 and a judgment processing circuit 104. (col. 28, line 66 through col. 29, line 16) As illustrated in FIG. 19, the above-mentioned color detection circuit is constituted by first color detection circuit 125 and a second color detection circuit 126. (col. 30, lines 52-54) As illustrated in FIG. 21, the above-mentioned second color detection circuit 126 is provided with two comparators 221 and 222, and an AND circuit 223. The above-mentioned comparator 221 compares the maximum value feature amount MAX calculated in the maximum value calculation circuit 121a (FIG. 19) with a threshold value THMAX, and in the case when the maximum value feature amount MAX is not less than the threshold value THMAX, outputs "1", and in the other cases, outputs "0" to the AND circuit 223 as a signal S221. The above-mentioned comparator 222 compares the maximum density difference feature amount SUB calculated in the maximum density difference calculation circuit 121c (FIG. 19) with a threshold value THSUB, and in the case when the maximum density difference feature amount SUB is not less than the threshold value THSUB, outputs "1", and in the other cases, outputs "0" to the AND circuit 223 as a signal S222. The above-mentioned AND circuit 223 calculates a logical product of the signals signal S221 and S222 from the comparators 221 and 222, and outputs the result to the count circuit 123 as the second color detection result signal S126 that is the output of the second color detection circuit 126. With the above-mentioned construction, the

second color detection circuit 126 compares the maximum value feature amount MAX and the maximum density difference feature amount SUB in the same coordinates in the specific area with the threshold values set for the respective factors, and outputs the second color detection result signal S126 in two ways. That is, "1" of the second color detection result signal S126 represents "deep color area" and "0" thereof represents "area other than the deep color area". (col. 32, lines 14-46)

Thus, *Mutoh et al* merely discloses a color judgment circuit 102 provided with a color detection circuit 122 including a second color detection circuit 126 provided with two comparators 221, 222 and a AND circuit 223. In particular, comparator 221 compares a maximum value feature amount with a threshold value while comparator 222 compares the maximum density difference feature amount with a threshold value for the same coordinates. Thus, nothing in *Mutoh et al* shows, teaches or suggests a) deciding whether differences between color data of a target pixel and those of pixels adjacent thereto exist as claimed in claims 1, 5 and 8 and b) deciding whether differences or calculation results exist in second ranges different from first ranges as claimed in claims 1, 5, 8, 11, 14 and 17. Rather, *Mutoh et al* merely discloses comparing maximum value features with threshold values or maximum density differences with a threshold value (i.e., no first and second ranges are shown, taught or suggested nor are differences between a target pixel and adjacent pixels).

Arai appears to disclose a color range designation apparatus, method and computer readable medium in which a color range for a portion of a display image is designated and the image with the designated color range is processed for

displaying. (col. 1, lines 12-16) FIG. 7 is a block diagram of an embodiment of a color range designation routine of the present invention. The color range designation routine 200 of the present embodiment includes, as shown in FIG. 7, an image storing block 201, a display image calculating block 202, an image displaying block 203, a display position designating block 204, a color range data calculating block 205, and a color range data storing block 206. (col. 5, lines 43-50) When the color of the designation pixel of the display image is read at step S4-4, the color range data calculating block 205 at step S4-5 causes the processor to determine whether the read color of the designation pixel falls outside a stored color range previously stored by the color range data storing block 206. In the color range data storing block 206, a color of a pixel of the display image is defined by a set of primary colors RGB, and a range between a minimum color and a maximum color is determined with respect to each of the primary colors RGB for the designation pixel. When the color of the designation pixel falls outside the previously stored color range at step S4-5, the color range data calculating block 205 at step S4-6 causes the processor to renew the previously stored color range by the color of the designation pixel. After the step S4-6 is performed, the step S4-2 is repeated. (col. 7, lines 10-27)

Thus, *Arai* merely discloses determining a range between minimum and maximum color for each primary color of a designated pixel and if the color falls outside the color range, renewing the previously stored color range. Thus, nothing in *Arai* shows, teaches or suggests a) deciding whether differences between color data of a target pixel and those of pixels adjacent thereto exist as claimed in claims 1, 5 and 8 and b) deciding whether differences or calculation results exist in a second

range different from a first range as claimed in claims 1, 5, 8, 11, 14 and 17. Rather, *Arai* merely discloses if the designated pixel falls outside a previously stored color range, restoring the previously stored color range.

The combination of *Mutoh et al* and *Arai* would merely suggest to replace the two comparators 221 and 222 of *Mutoh et al* with the color range detection of *Arai*. Thus, nothing in the combination shows, teaches or suggests the primary features as claimed in claims 1, 5, 8, 11, 14 and 17 as discussed above. Therefore, applicants respectfully request the Examiner withdraws the rejection to claims 1, 5, 8, 11, 14 and 17 under 35 U.S.C. §103.

Claims 2-3, 6 and 9 depend from claims 1, 5 and 8 and recite additional features. Applicants respectfully submit that claims 2-3, 6 and 9 would not have been obvious within the meaning of 35 U.S.C. §103 over *Mutoh et al* and *Arai* at least for the reasons as set forth above. Therefore, applicants respectfully request the Examiner withdraws the rejection to claims 2-3, 6 and 9 under 35 U.S.C. §103.

Claims 4, 7, 10, 13, 16 and 19 were rejected under 35 U.S.C. §103 as being unpatentable over *Mutoh et al* in view of *Arai* and further in view of *Sonoda et al* (U.S. Patent No. 6,115,494). In addition, claims 12, 15 and 18 were rejected under 35 U.S.C. §103 as being unpatentable over *Mutoh et al* in view of *Arai* and further in view of *Kuwata et al* (U.S. Patent No. 6,151,410).

Applicants respectfully traverse the Examiner's rejection of the claims under 35 U.S.C. §103. The claims have been reviewed in light of the Office Action, and for reasons which will be set forth below, applicants respectfully request the Examiner withdraws the rejection to the claims and allows the claims to issue.

As discussed above, since nothing in the primary references of *Mutoh et al* and *Arai* shows, teaches or suggests the primary features as claimed in claims 1, 5, 8, 11, 14 and 17, applicants respectfully submit that the combination of the primary references with the secondary references to *Sonoda et al* or *Kuwata et al* would not overcome the deficiencies of the primary references. Therefore, applicants respectfully request the Examiner withdraws the rejection to claims 4, 7, 10, 12, 13, 15, 16, 18 and 19 under 35 U.S.C. §103.

The prior art of record, which is not relied upon, is acknowledged. The references taken singularly or in combination do not anticipate or make obvious the claimed invention.

Thus it now appears that the application is in condition for reconsideration and allowance. Reconsideration and allowance at an early date are respectfully requested.

If for any reason the Examiner feels that the application is not now in condition for allowance, the Examiner is respectfully requested to contact, by telephone, the applicants' undersigned attorney at the indicated telephone number to arrange for an interview to expedite the disposition of this case.

In the event that this paper is not timely filed within the currently set shortened statutory period, applicants respectfully petition for an appropriate extension of time. The fees for such extension of time may be charged to our Deposit Account No. 02-4800.

In the event that any additional fees are due with this paper, please charge our Deposit Account No. 02-4800.

Respectfully submitted,

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AMENDMENTS TO THE DRAWINGS:

Attached are replacement sheets for Figures 2, 6 and 8.